

# **EXHIBIT 2**

# CONCISE TELECOM NETWORKING DICTIONARY

*The Most  
Up-To-Date  
Reference*

The concise A to Z guide to telecommunications  
and networking

Contains the latest new technologies, acronyms,  
and vendor-specific definitions

Easy-to-use and illustrated

**McGraw-Hill**

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**blocking** A condition in switches have no paths available to complete a circuit.

**BMP** See bit-mapped graphics format.

**BN** See boundary node.

**BNC connector** British Naval Connector or Bayonet Nut Connector or Bayonet Neil Consulman. A bayonet-locking connector for slim coaxial cables. A type of connector used with the 10base2 Ethernet coaxial cables, such as the RG-58 A/U cable.

**BOD** See Bandwidth-on-Demand.

**Bolt, Beranek, and Newman Inc. (BBN)** High-technology company located in Massachusetts which developed and maintained the ARPANET core gateway system. See Internet and BBN Planet.

**BOM** See beginning of message.

**bomb** To fail, as in when a program ends prematurely or aborts.

**boot** Bootstrap. The starting-up of a computer, which involves loading the operating system and other basic software. A *cold boot* occurs when the computer is turned on from an off position. A *warm boot* occurs when the computer is reset while already on. The term "bootstrap" refers to a strap attached to the top of a boot that assists in pulling the boot on. Hence, the expression "pull oneself up by the bootstraps."

**boot flash** Flash memory used to store an emergency copy of IOS in Cisco routers. If installed, it will take the place of boot ROM. Boot flash can be rewritten multiple times, versus ROM, which can be written only once.

**bootable diskette** A diskette from which you can boot your computer.

**BOOTP** See Bootstrap Protocol.

**bootstrap block** That part of the index file on a system disk which contains a program that loads the operating system into memory.

**Bootstrap Protocol (BOOTP)** An Internet protocol (IP) documented in RFC951, which enables a diskless workstation to determine its own IP address, the IP address of the BOOTP

server, and which file to be loaded into memory in order for the workstation to boot.

**Border Gateway Protocol (BGP)** The dynamic routing protocol used between ISPs to manage extremely large routing tables. BGP enables groups of routers (called *autonomous systems*) to share routing information so that efficient, loop-free routes can be established. BGP is commonly used within and between Internet Service Providers (ISPs). The protocol is defined in RFC 1771.

**bot** Program that runs automatically.

**boundary function (BF)** In SNA, protocol support for attached peripheral nodes.

**boundary node (BN)** A network node that performs the function of transforming network addresses to local addresses. A boundary node can also be a network device that sits in one domain with a network link to another domain.

**BPDU** See bridge protocol data unit.

**Bps** See bits-per-second.

**bracket** In SNA, one or more chains of RUs and their responses that are exchanged between session partners.

**bracket protocol** A data flow control protocol in which session partners exchange data via IBM's SNA bracket protocol.

**branch** In tree structures, a single section of the tree that ends with a leaf.

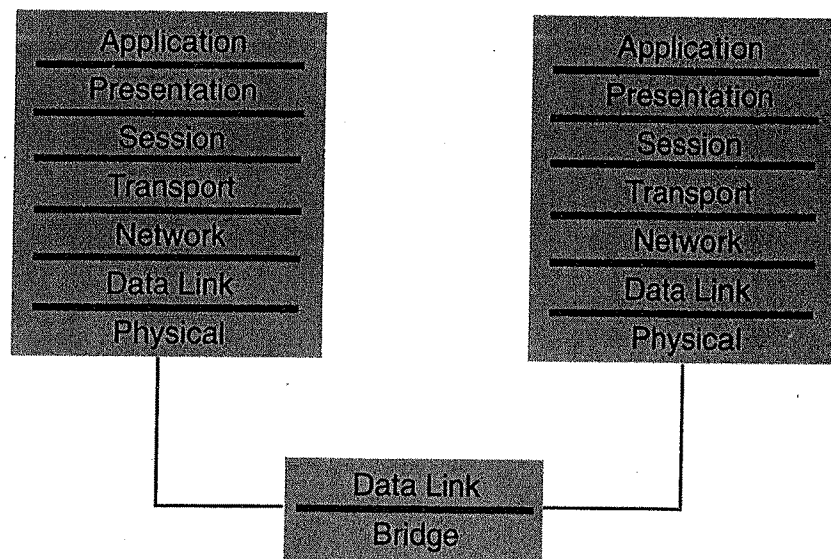
**Break key** A key on computer keyboards which temporarily interrupts the computer's communications line.

**BRHR** See Basic Research and Human Resources.

**BRI** See basic rate interface.

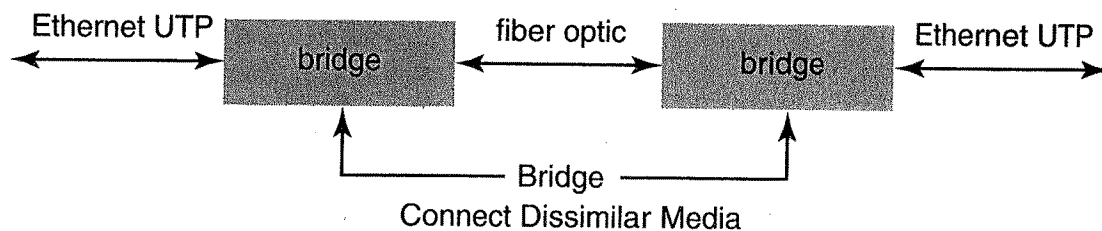
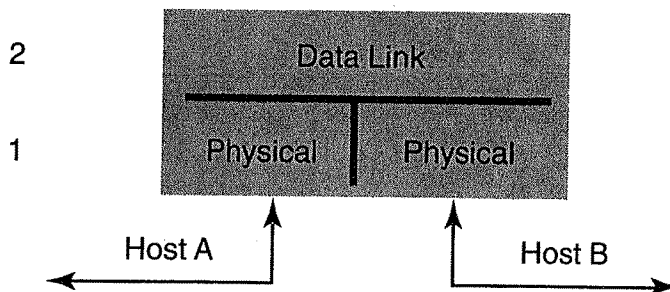
**bridge** (*Illustration*) (a) An interface connecting two similar or dissimilar LAN media types. (b) A device that connects two LANs. It performs its functions at the data link control (DLC) layer.

**bridge forwarding** Process that uses entries in a filtering database to determine whether frames with a given MAC destination address can be for-



Layers

Bridge



warded to a given port or ports. Described in the IEEE 802.1 standard. See IEEE 802.1.

**bridge ID** The bridge label, combined with the address of the adapter connecting the bridge to the LAN segment with the lowest LAN segment number.

**bridge label** A two-byte hexadecimal number that the user can assign to each bridge.

**bridge number** The bridge identifier that the user specifies in the bridge program configuration file. The bridge number distinguishes between parallel bridges.

**bridge protocol data unit (BPDU)** A spanning-tree protocol hello packet that is sent out at regular intervals to exchange information among switches/bridges in the network. *See* spanning tree, PDU, *and* bridging.

**bridge static filtering** Process in which a bridge maintains a filtering database consisting of static entries. Each static entry equates a MAC destination address with a port that can receive frames with this MAC destination address and a set of ports on which the frames can be transmitted. Defined in the IEEE802.1 standard. *See* IEEE 802.1.

**bridging** A method of path selection (*contrast routing*). In a bridged network, no correspondence is required between addresses and paths. Put another way, addresses don't imply anything about where hosts are physically attached to the network. Any address can appear at any location. In contrast, routing requires more thoughtful address assignment, corresponding to physical placement. Bridging relies heavily on broadcasting. Because a packet may contain no information other than the destination address, and that implies nothing about the path that should be used, the only option may be to send the packet everywhere. This is one of bridging's most severe limitations, because this is a very inefficient method of data delivery, and can trigger *broadcast storms*. In networks with low-speed links, this can introduce crippling overhead. *See* translational *and* transparent bridging.

**Broadband Integrated Services Digital Network (B-ISDN)** An ITU-T-introduced protocol platform to support the integrated, high-speed transmission of data, audio, and video in a seamless fashion. Asynchronous transfer mode (ATM) has emerged as a suitable transport standard. B-ISDN data may be transmitted over fiber optic telephone lines at data rates of 1.5 million bits per second (bps).

**broadband transmission** Data transmission type in which a single physical medium (wire) can carry several channels at once. Used in cable television (and in other forms) to allow multiple high-speed signals to share the bandwidth of a single cable via frequency division multiplexing.

**broadband-intercarrier interface (B-ICI)** An interface that supports service connections (such as CRS, CES, SMDS, FR) across public ATM networks and/or carriers.



For more information, go to <http://www.atmforum.com> and search on B-ICI for a summary of the specification.

**broadcast** The simultaneous transmission of data to more than one destination. A source sends one copy of a message to all the nodes on the network even if any node does not want to receive such messages. *See* anycast, unicast, multicast, *and* IP multicasting.

**broadcast address** Generally, a MAC destination address of all ones. It is reserved for sending to all stations on a internetwork. Compare with *multicast address* and *unicast address*.

**broadcast and unknown server (BUS)** A server that forwards multicast, broadcast, and unknown-destination address traffic to the attached LECs. *See* LANE.

**broadcast domain** The part of a network that receives the same broadcasts.

**broadcast message** A message from one station sent to all other users. On a token-ring LAN, the destination address is unspecified, thus all devices receive the message.

**broadcast network** A network that supports more than two attached routers, and has the capability to address a single physical message to all of the attached routers.

**broadcast search** In APPN, the simultaneous search to all network nodes in the form of a request for some type of data.

**broadcast storm** A state in which a message that has been broadcast across a network results in even more responses. Each response then results in still more responses, in a snowball effect. A severe broadcast storm can block all other network traffic, resulting in a network meltdown. Broadcast storms can usually be prevented by carefully configuring a network to block illegal broadcast messages.

**brouter** In local area networking, a device that combines the dynamic routing capabilities of an internetwork router with the capability of a bridge to interconnect LANs.

**browse** With regard to functions that can be performed on an entity, browse merely permits viewing.

**browser** Client application software for accessing data on the World Wide Web. *See* client, URL, WWW, Netscape, Mosaic, and home page.

**BSC** *See* binary synchronous communication.

**BT** *See* burst tolerance.

**Btrieve** According to Novell documentation, this is a complete indexed record management system designed for high-performance data handling.

**BTW** By the way. A shorthand appended to a comment written in an online forum, e-mail or other electronic communication types.

**bubble sort** A simple but popular sorting algorithm. Although bubble sorting is simple, it is rather inefficient compared to other sorting techniques like *merge sorts* or *heap sorts*.

**buffer** (a) A temporary storage area, usually in RAM, used to hold input or output data. (b) In data transmission, a temporary storage location for information being sent or received. Usually located between two different devices that have different abilities or speeds for handling the data.

**buffer allocation size (BASize)** A 1-byte field in the CPCS-PDU header to indicate to the receiving end the buffer space that needs to be reserved for reassembling the CPCS-PDU.

**bug** An error or defect in software or hardware that causes a program to malfunction. Legend has it that the term originated when a moth was discovered trapped in the components of the first digital computer.

**building backbone** The link between the building and campus backbone.

**bulletin board system (BBS)** A computerized meeting and announcement system that

allows users to carry on discussions, upload and download files, and make announcements without users being connected to the computer at the same time.

**burn-in** Initial testing of computer equipment. The theory behind the use of the burn-in techniques is that most of the weak parts will fail during early operation, prior to shipment to the end user. Most computer equipment undergoes a burn-in test at the factory before being released for sale.

**burst, committed (Bc)** Negotiated tariff metric that represents the maximum amount of data (in bits) that a frame relay internetwork is committed to accept and transmit. *See* Bc and CIR.

**burst, excess (Be)** Negotiated tariff metric in a frame relay internetworks. *See* Bc and DE.

**burst mode** To send data at the maximum transmission rate for a short interval of time.

**burst tolerance (BT)** Proportional to the MBS, a measure (*leaky bucket parameter*) for conformance checking of the SCR

**burstiness** A source traffic characteristic that is defined as the ratio of the peak cell rate (PCR) to the average cell rate. It is a measure of the intercell spacing. *See* MBS.

**bus** (a) A network configuration in which nodes are interconnected through a bi-directional transmission medium. (b) A collection of wires through which data is transmitted from one part of a computer to another. A sort of highway on which data travels within a computer.

**bus interface gate array (BIGA)** A Catalyst-5000 Switch technology which allows the switch to receive and transmit frames from its packet-switching memory to its MAC local buffer memory without the intervention of the host processor.

**bus network** A network in which all nodes are connected to a single wire (the bus) that has two endpoints. Ethernet 10Base-2 and 10Base-5 networks, for example, are bus networks.

**bus topology** One of the three principal topologies used in LANs. All devices are con-

designers, to help during the design phase of product development.

**computer-aided design and drafting (CADD)** Computer-aided design (CAD) systems with additional drafting features.

**computer-aided engineering (CAE)** Computer systems that analyze engineering designs. CAE systems are able to simulate a design under a variety of conditions to see if it actually works.

**computer-aided manufacturing (CAM)** Computer systems used to design and manufacture products.

**computer-aided software engineering (CASE)** A category of software that provides a development environment for programming teams. CASE systems offer tools to automate, manage and simplify the development process.

**computer-assisted instruction (CAI)** A device that allows the transmission of screens from one monitor to other monitors within a network.

**computer-based training (CBT)** Training in which students learn by executing special instructional programs on a computer. For example, students can learn new computer applications by practicing with the application using the CBT method.

**computer-integrated manufacturing (CIM)** A series of computerized tools and techniques aimed to integrate manufacturing processing and design. This may include CAD (part and product design, tool and fixture design), CAPP (process planning), CAM (programming, production planning, machining, assembly), CAQC (quality control, inspection) and ASRS (storage and retrieval of raw material, WIP, finished product) modules.

**computer-telephony-integration (CTI)** Systems that enable a computer to act as a telephone call center, accepting incoming calls and routing them to the appropriate device or person.

**concentrator** A type of multiplexer that combines multiple channels, such as dial-up access

as provided by an ISP, into a single transmission so that all the individual channels can be simultaneously active.

**concurrent** Pertaining to the occurrence of two or more activities within a given interval of time.

**conductors** A piece of wire. For 10BaseT purposes it is solid, copper wire, not stranded.

**Conference of European Postal and Telecommunications Administrations (CEPT)** An association of the 26 European PTTs, which recommends communication specifications to the ITU-T.

**Conference on Data Systems Languages (CODASYL)** An organization founded in 1957 by the United States Department of Defense to develop programming languages. CODASYL created COBOL. The organization is no longer extant, but the term CODASYL is still used sometimes to refer to COBOL.

**conference** A multiparty, multimedia presentation, where "multi" implies greater than or equal to one.

**configuration (CFGR)** The act of setting up a system's rules. The manner in which the hardware and software of an information processing system are organized and interconnected.

**configuration management service (CMS)** A service that is responsible for device configurations and device moves, adds, and changes.

**configuration manager (CM)** A central console used to set up configuration subsets.

**configure** To set up a program or computer system for a particular application.

**congestion** (a) A network state caused by one or more overloaded network devices. Congestion leads to datagram loss. (b) A stable condition where a network becomes flooded with retransmissions. *See* congestion control.

**congestion control** A resource and traffic management mechanism to avoid and/or prevent excessive situations (buffer overflow, insufficient bandwidth) that can cause the network to collapse. There exist various congestion control methods. *See* flow control.